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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/600,203	08/09/2000	Satoshi Ogata	13409.1USWO	7904

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EXAMINER

SAVAGE, MATTHEW O

ART UNIT PAPER NUMBER

1723

DATE MAILED: 12/05/2002

22

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/600,203

Applicant(s)

OGATA ET AL.

Examiner

Matthew O Savage

Art Unit

1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 October 2002.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 13-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.

- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Art Unit: 1723

Newly submitted claims 13-15 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: newly submitted claims 13-15 are directed to a method of preparing a filter cartridge whereas the original claims are directed to a filter cartridge. The newly submitted claims lack unity with respect to the original claims since the shared technical features do not define a contribution over the prior art for the reasons set forth in the rejection of claim 1 listed below.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 13-15 have been withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-12 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The limitation of the "continuous fiber non-woven fabric" recited in claims 1-7 and 11 lacks basis in the original specification and is considered new matter.

Art Unit: 1723

The subject matter of claim 12 is considered new matter.

Claims 1-12 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification fails to adequately teach how to make the recited "continuous long fiber non-woven fabric".

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The limitation of the "continuous fiber non-woven fabric" recited in claims 1-7 and 11 lacks basis in the original specification.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 1, it is unclear as to what type of fabric a "continuous fiber non-woven fabric" comprises. Concerning line 3 of claim 1, it is unclear as to how the fibers are "thermally adhered" since no means or structure for adhering the fibers has been positively recited in the claim.

Art Unit: 1723

Claim 12 is considered vague and indefinite. In particular, it is unclear as to which variables the ratio is based upon. Concerning line 2, it is unclear as to how the units "MPa" can relate to diameter since they typically refer to a pressure value, i.e., mega pascals. Regarding lines 2-3, the limitations "initial trapped particle diameter being 1-1.113 when initial particle diameter is 7.1 to 30" micrometers makes no sense.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 4-45811 in view of Pike et al.

With respect to claim 1, JP '811 discloses a strip, non-woven fabric 3 wound around a perforated cylinder 4 in twill form (see FIGS. 1 and 2). As best understood, JP '811 fails to specify long thermoplastic fibers prepared using a spun bonding method with fiber intersections that are adhered. Pike et al disclose filter media including continuous thermoplastic fibers prepared using a spun bonding method (see example 1 in columns 10-11) with fiber intersections that are thermally adhered (see example 1) and suggests that such an arrangement has high filtration efficiency and physical strength (see the first full paragraph of col. 3). It would have been obvious to have modified the JP '811 filter so as to have included long thermoplastic fibers with fiber

Art Unit: 1723

intersections that were adhered as suggested by Pike et al in order to provide a filter media having high filtration efficiency and physical strength properties.

Regarding claim 2, Pike et al disclose a thermoplastic adhesive composite fibers including a low melting point resin and a high melting point resin with a difference in melting point be 10 degrees C or more (see example 1).

Concerning claim 3, Pike et al disclose the low melting point resin as being linear low density polyethylene and the high melting point resin as being polypropylene (see example 1).

As to claim 4, Pike et al disclose that it is known in the art to bond an analogous fabric by thermal compression via a calendering process (see from line 63 of col. 1 to line 22 of col. 2). Accordingly, it would have been obvious to have modified the filter fabric suggested by JP '811 and Pike et al so as to have been bonded by a calendering process as known in the art in the case that equipment for carrying out the calendering process was on hand and in the case that a lower filtration efficiency filter media was acceptable.

Regarding claim 5, Pike et al disclose the fiber intersections of the fabric as being bonded by a hot blast (e.g., via a the through air bonder described in example 1).

Concerning claim 6, JP '811 discloses the strip as being twisted (see the abstract).

Regarding claim 10, JP '811 and Pike et al fail to specify the recited void rate, however, such a modification would have been obvious in order to optimize the filter for a particular application.

Concerning claim 11, JP '811 and Pike et al fail to specify the slit width and product of the slit width and basis weight, however, such a modification would have been obvious in order to optimize the filter for a particular application.

As to claim 12, JP '811 and Pike et al fail to specify the recited ratio, however, such a modification in filter structure, i.e., selecting the fiber diameter and filter density to achieve such a ratio would have been obvious to one skilled in the art in order to optimize the filter for a particular application.

Claims 7-9 are rejected under 35 U.S. C. 103(a) as being unpatentable over JP 4-45811 in view of Pike et al as applied to claim 1 above, and further in view of JP 1-115423.

With respect to claim 7, JP '811 and Pike et al fail to specify pleated matter having 4-50 pleats. JP '423 discloses the concept of pleating an analogous non woven strip 3 so as to have 4-50 pleats (see FIG.6) and suggests that such an arrangement increases the strength and dimensional stability of the filter media (see the abstract). It would have been obvious to have modified the combination suggested by JP '811 and Pike et al so as to have included pleated matter as suggested by JP '423 in order to increase the strength and dimensional stability of the filter.

Regarding claim 8, JP '423 discloses pleats that are non-parallel because the pleats extend along non-linear paths.

Concerning claim 9, JP '811 and Pike et al fail to specify the recited void rate, however, such a modification would have been obvious in order to optimize the filter for a particular application.

Applicant's arguments filed 10-4-02 have been fully considered but they are not persuasive.

Applicant argues that there is no reason to combine the Japanese '811 reference and Pike et al since the '811 reference is limited to depth filtration whereas Pike et al is limited to surface filtration, however, it is held that such a combination is proper since Pike et al does not expressly teach against using a non-woven fabric for depth filtration, and because both the '811 reference and Pike et al disclose the use of non-woven sheet fabrics for filtration in general. Accordingly, it is held that one skilled in the art would modify the '811 device so as to have included the sheet non-woven filter medium disclosed by Pike et al for the specific advantages taught by Pike et al including providing a sheet filter medium having a high density, high strength, a smooth surface, and a relatively uniform porosity distribution (see lines 55-61 of col. 3 of Pike et al).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 1723

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew O Savage whose telephone number is 703-308-3854. The examiner can normally be reached on Monday-Friday, 7:00am-3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda W. Walker can be reached on 703-308-0457. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3602 for regular communications and 703-305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

M. Savage
Matthew O Savage
Primary Examiner
Art Unit 1723

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December 3, 2002December 3, 2002